What is claimed is:

1.   A DNA construct containing an infectious clone of an RNA virus containing a hairpin sequence corresponding to a gene encoded within the nucleus of the target host, said hairpin sequence being a sequence fragment of greater than 20 bp in length where the sequence fragment in the sense orientation is followed by different sequence fragment, derived from the first in the reverse complement orientation, with: no intervening sequence; or an intervening sequence of no greater than the collective length of the two sequence fragments comprising the hairpin.

2.   A cytoplasmic inhibition of nuclear gene expression resulting from hairpin RNA expression from an RNA virus genome in accordance with claim 1.

3.   A plant host experiencing cytoplasmic inhibition of gene expression following infection with an RNA virus genome containing a hairpin nucleotide sequence in accordance with claim 1.

4.   An animal host experiencing cytoplasmic inhibition of gene expression following infection with an RNA virus genome containing a hairpin nucleotide sequence in accordance with claim 1.

5.   A method for determining nuclear gene function through a process of cytoplasmic inhibition of gene expression following infection with an RNA virus genome containing a hairpin nucleotide sequence in accordance with claim 1.

6.   A hairpin sequence vector in accordance with claim 1 comprising a tobacco mosaic virus.

7.   A hairpin sequence vector in accordance with claim 1 comprising a barley striped mosaic virus genome.

8.   A virus vector for cytoplasmic gene silencing applications, in accordance with claim 1, comprising a very short, yet highly active gene silencing inducer, such as said hairpin sequence, wherein said virus vector exhibits improved genetic stability.

9.   A vector as specified in claim 1, that contains a 20-30 nucleotide hairpin sequence for infection of mammalian cells and delivery of hairpin RNA to the cytosol for cytoplasmic gene inhibition.

10.   A vector as specified in claim 9, derived from the alphavirus, rubivirus virus families.